

### **REMARKS**

Applicant would like to thank the Examiner for the thorough review of the present application. As discussed in detail below, the present claims include recitations that patentably distinguish the claimed invention over the cited references, taken individually or in combination. Based upon the following remarks, Applicant respectfully requests reconsideration of the present application and allowance of the pending claims.

#### **Claim Status**

Claims 1 –17 are currently pending in the application.

Claims 1, 2, 4-6, 8, 10, 13-15 and 17 have been amended to add clarity and to further distinguish the claimed invention from the cited references.

#### **Claim Rejections Under 35 U.S.C. § 103(a)**

Claims 1-9 and 12-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Korean Patent Application No. 2000-0000244, published in the name of Park (hereinafter, the Park publication) in view of Korean Patent Application No. 1999-0055454, published in the name of Hong Park (hereinafter, the Hong Park publication).

Claims 10 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Park publication in view of the Hong Park publication and in further in view of United States Patent No. 6,603,844, issued in the name of inventor Chavez, Jr. et al. (hereinafter, the Chavez patent).

Applicant respectfully submits that these rejections are overcome by the following arguments. The arguments are presented in the order in which the elements appear in the claims and, therefore, do not reflect an order of significance. Thus, Applicant desires that the Examiner consider each argument independently.

#### **Distinguishing Arguments Pertaining to Independent Claim 1**

The Park Publication Does Not Teach or Suggest an HLR Furnishing a Call-Receiving Exchanger, When a Location of a Call-Receiving Terminal is Registered through the Call-Receiving Exchanger, with First Information on Whether an Ordinary Tone is to be Replaced or Not and Second Information Informing a Route to a Sound Providing Means.

The first step of Claim 1 has been amended to require that a HLR furnish a call-receiving exchanger, when a location of a call-receiving terminal is registered through the call-receiving exchanger, with first information on whether an ordinary tone is to be replaced or not and second information informing a route to a sound providing means. In this regard, the first step of claim 1 requires that the HLR provide the call-receiving exchanger with tone replacement status (first information) and the route the sound providing means (second information) when the location of a terminal is registered through the call-receiving exchanger. This step thus requires the following:

- The first information and the second information must be registered and stored at the HLR in advance of initiating a call.
- The location of the call-receiving terminal is registered through the call-receiving exchanger.
- Once the location of the call-receiving terminal is registered, the first and second information is provided to the call-receiving exchanger.

As described at page 6, beginning at line 20, “the HLR...has in every subscriber profile the first information...and the second information. *Every mobile exchanger in the network, that functions as a conventional network element, receives the first and second information of a subscriber through communicating with the HLR when the subscriber requests location registration*” (emphasis added).

Additionally, as described at page 8, beginning at line 17, “if location registration for that subscriber is requested from an exchange server, ...the HLR provides service-related information and routing information for the exchanger that requested location registration.”

The Park publication, at page 4 lines 4-5, teaches that steps S1000 to step 14000 are “*the same call processes as stages of the conventional technique.*” (Emphasis added). Specifically, the transmitting Exchange transmits a location request to a HLR (S1000). The HLR carries out a routing request for an inquiry to connect a called device to a reception MSC/VLR (S1100). The reception exchange MSC/VLR transmits the routing return response to the HLR (S1200) and the

HLR transmits the location return response to the transmitting Exchanger (S1300). At which an ISUP call set up is carried out from the transmitting Exchanger to the reception exchanger (S1400).

The current Office Action states, at page 3, second paragraph, that the Park publication “discloses that the HLR carries out a routing request that is directed to the MSC 400, Furthermore, in the sequence steps, MSC 200 sends an ISUP call setup to the MSC 400 that contains information on whether the sound is a ringback tone or an alternative sound and the place where the alternative sound is read. The applicant disagrees with this assessment of the Park teaching. The applicant asserts that the Park publication, at page 4, lines 4-5 and lines 16-21 makes it obvious that the ISUP call setup does not include the first information (i.e., information on whether the sound is a ringback tone or an alternative sound) and second information (i.e., place where the alternative sound is read).

In the Park publication, page 4, lines 16-19, the tone replacement status (i.e., whether or not the sound is the ringback tone or the alternative sound) is determined by a set value of the termination trigger field *stored in a database of the receiver exchanger* (emphasis added). At step S1500, shown in Fig. 2 of the Park publication, the receiver exchanger sends “analyzed information” to a Service Control Point (SCP). The analyzed information includes the termination trigger field (i.e., the tone replacement status), the storage of the alternative sound in a certain IP and the search for the corresponding IP through a certain path, among other information.

Thus, in the Park publication the first (i.e., sound replacement status) and second information (i.e., sound replacement route) are stored in a database of the receiver exchanger and is sent to the SCP. This is in contrast to the first step of Claim 1 of the present invention, which requires that the first and second information be furnished from the HLR to a call-receiving exchanger, when a call-receiving terminal is registered through the call-receiving exchanger. As such, the Applicant asserts that the Park publication is distinguishable from Claim 1 of the present invention and requests withdrawal of the rejection of Claim 1 based at least on this distinguishing argument.

The Park Publication Does Not Teach or Suggest an HLR Furnishing a Call-Receiving Exchanger, Before a Call-Sending is Attempted from a Call-Sending Terminal to the Call-Receiving Terminal, with Second Information Informing a Route to a Sound Providing Means.

The first step of Claim 1 has been amended to require an HLR to furnish a call-receiving exchanger, before a call-sending is attempted from a call-sending terminal to the call-receiving terminal, with second information informing a route to a sound providing means. As such, the first step of Claim 1 requires that the second information (i.e., the route to the sound providing means) be provided to the call-receiving exchanger *before a call-sending is attempted* from the call-sending terminal to the call-receiving terminal (Emphasis added to show distinguishing characteristic).

However, as taught by the Park publication, information (TDLN) for routing the call to an IP (600) is not registered on an HLR and is obtained by signaling between the SCP and an IP *after a call sending is attempted*. (Emphasis added to show distinguishing characteristic). Specifically, referring to page 4, line 28 – page 5, line 5 of the Park publication, when the SCP requests an IP for the temporary local directory (TLDN), which is information for routing to the IP storing a sound (S1600), the IP transmits the TLDN to the SCP (S1700), the SCP transmits the received TLDN to a call-receiving MSC 9S1800), and then the call-receiving MSC performs a call try to the IP by using the received TLDN (S1900).

Thus, since in the Park publication, the teaching is limited to obtaining the route to the sound providing means after a call sending is attempted as opposed to the amended limitation of claim 1, which requires that the route to the sound providing means be obtained prior to attempting the call sending, the Applicant asserts that the Park publication is further distinguishable from Claim 1 of the present invention and requests withdrawal of the rejection of Claim 1 based at least on this distinguishing argument.

Applicant would further point out that the processes of signaling between the MSC and the SCP and between the SCP and the IP (S1500 – S1800 as described in the Park publication), which should be essentially performed in the Park Publication, are not required in the present invention, thus, the time-delay until the call-sending terminal receives the RBT-replacing sound is significantly reduced and the load is also significantly reduced; resulting in a more cost effective network. While the applicant realizes that these negative limitations are not explicitly

stated in Claim 1, the Applicant wishes to make this argument of record to illustrate why the present invention is clearly an improvement over the teachings of the Park publication.

The Hong Park Publication Does Not Teach or Suggest Furnishing, by the Call-Receiving Exchanger, the Sound Providing Means with Third Information on Call State nor Determining, at the Sound Providing Means, a Tone Replacing Sound Based on the Received Third Information on Call State.

The second step of claim 1 has been amended to require that the sound providing means be furnished by the call-receiving exchanger with third information on call state. Call state information is defined in the specification and in the art as, an idle state, a busy state, a call-waiting state and the like. As previously noted, the third step of claim 1, requires that the sound providing means determine a tone replacing sound based on the third information, which as defined in the second step, is call state information.

The third step of claim 1, requires that the sound providing means determine a tone replacing sound based on the third information, which as defined in the second step, is call state information.

The Examiner has admitted that the Park publication does not teach or suggest furnishing the sound providing means with third information on the call state. This is because the Park publication is limited to retrieving an alternative sound for a ringing state and, therefore, in the teachings of the Park publication the call state is not required because only the ringing state is afforded an alternative sound.

The Examiner relies on the Hong Park publication for a general teaching of call state information used in a tone replacement process. However, the tone replacement process that is taught by the Hong Park publication, is device-based tone replacement and is therefore limited to replacing tones experienced on the call-sending device as defined by the user of the call-sending device and does not provide a teaching, and more specifically a method, for replacing tones at the bequest of the call-receiving device. Hence, in the Hong Park publication the user/subscriber of the call-sending can configure their call-sending telephone to replace conventional tones with a voice message, music, another tone or the like but the call-receiving terminal can not dictate a tone replacement. As such, in the Hong Park publication each call state that the call-sending device experiences, for example a busy signal state, a ringing state, an idle line state and the like

can be assigned a different voice message, a music file, another tone or the like regardless of the call-receiving terminal. However, the Hong Park patent does not teach or suggest that these call state tones can be replaced by tones defined by the call-receiving terminal.

The Hong Park publication does not teach or suggest a network based system for tone replacement such that call-sending device may experience tone replacements if the call-receiving party subscribes to a tone replacement subscription. In this regard, the present invention is unique, in that, it provides the subscribers a means for identifying themselves by providing a voice message or a unique sound to the call-sending party when the call-sending party calls the subscriber. The Hong Park publication does not provide tone replacement to call-sending terminals because tone replacement is limited to the sounds which the user of the device experiences.

This distinguishing feature is further enlightened by the fact that in the present invention, as required by Claim 1, the call-receiving exchanger determines whether a common ring-call tone is replaced or not based on the receipt of the first information from the HLR. In the Hong Park publication the call-sending exchanger determines whether a common ring-call tone is replaced or not.

Additionally, in the present invention, as required by Claim 1, the call-receiving exchanger receives the second information (i.e., the route to the sound providing means) from the HLR and, as such, the call-receiving exchanger communicates with the sound providing means based on the second information. However, in the Hong Park reference, the call-sending exchanger has the routing information to the sound providing means and, as such, the call-sending exchanger and the sound providing means are in direct communication.

Accordingly, the Hong Park patent does not teach or suggest that the first and second information be provided to the call-receiving exchanger.

Additionally, in the present invention, as required by Claim 1, the state of the call-receiving terminal is determined by the call-receiving exchanger, the state information is provided to the sound providing means and the sound providing means selects a sound corresponding to the state information.

In contrast to the present invention, specifically the limitations of Claim1, the Hong Park publication teaches that the state of the call-receiving terminal is determined by the call-sending

exchanger and a sound corresponding to the state of the call-receiving terminal is extracted from the call-sending exchanger. This is detailed at page 21, line 24 – page 22, line 7 of the Hong Park publication.

Therefore, the Hong Park publication does not teach or suggest sending call state information *from a call-receiving exchanger* to a sound providing means and having the sound providing means determine the tone-replacing sound based on the received third information. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 1.

Claims 3 and 5-11 depend from Claim 1 and, as a matter of law, add further limitations to independent Claim 1. Therefore, Claims 3 and 5-11 are believed allowable for at least the same reasons as presented above with respect to Claim 1.

#### Distinguishing Arguments Pertaining to Independent Claim 2

The first step of claim two has been amended such that it is identical to the first step of amended claim one, therefore the distinguishing arguments that apply to the first step of claim one are equally applicable to claim two. For the sake of brevity, the arguments presented above in relation to the first step of claim one, specifically the argument that the Park publication lacks a teaching of an HLR furnishing an call-receiving exchanger, when a location of a call-receiving terminal is registered through the call-receiving exchanger and before a call-sending is attempted from a call-sending terminal to the call-receiving terminal, with first information on whether an ordinary tone is to be replaced or not and second information informing a route to a sound providing means, will not be reproduced in this section of the response.

The Park Publication Does Not Teach Or Suggest Requesting, by an Call-Receiving Exchanger, a First Trunk Connection to the Sound Providing Means, if the Terminal is Called by a Second-In-Time Call-Sending Terminal Under Already-Connected Condition to a First-In-Time Terminal.

The second step of claim 2 requires that the call-receiving exchanger request a first trunk connection to the sound providing means, if the terminal is called by a second-in-time call-sending terminal under already-connected condition to a first-in-time terminal based on the first and second information (i.e. the sound replacement status and the sound replacement route,

respectively) and providing the sound replacing means with third information on call state (in this instance, call waiting). In other words, the call-receiving exchanger requests a trunk connection to the sound providing means if the terminal is receiving a call from a second-in-time caller but is already participating in another call with a first-in-time terminal (i.e., a call-waiting situation).

The Park publication does not teach or suggest sound replacement or alternative sounds for the situation in which the device receives a call from a later caller but is already participating in another call with a former caller (i.e., a call-waiting situation). As such, the Park publication does not teach or suggest requesting, by the call-receiving exchanger, a trunk connection to the sound providing means, *if the terminal is called by a second-in-time caller under already-connected condition to a first-in-time terminal*.

The Hong Park Publication Does Not Teach or Suggest Requesting, by a Call-Receiving Exchanger, a First Trunk Connection to the Sound Providing Means, *if the Terminal is Called by a Second-In-Time Call-Sending Terminal Under Already-Connected Condition to a First-In-Time Terminal*.

As noted above, the second step of claim 2 requires that the call-receiving exchanger request a first trunk connection to the sound providing means, if the terminal is called by a second-in-time call-sending terminal under already-connected condition to a first-in-time terminal based on the first and second information (i.e. the sound replacement status and the sound replacement route, respectively) and providing the sound replacing means with third information on call state (in this instance, call waiting).

The Hong Park publication teaches an alternative sound replacement that is device-based as opposed to network-based, as such the sound replacement that is taught by the Hong Park publication is limited to sounds that occur when the device on which the system is implemented experiences a sound. The Hong Park publication does not teach or suggest providing a call-sending terminal with an alternative or replacement sound during a call waiting period based on sound replacement configurations provide by the call-receiving terminal. In table 1 of the Hong Park publication the voice messages that are recorded as replacement messages are subsequently provided to the call-sending terminal when the call-sending terminal experience the call state associated with the voice message regardless on the call-receiving terminal.



Thus, the Hong Park publication does not teach or suggest a call-receiving exchanger requesting a first trunk connection to the sound providing means, if the terminal is called by a second-in-time call-sending party under already-connected condition to a first-in-time terminal based on the first and second information (i.e. the sound replacement status and the sound replacement route, respectively) and providing the sound replacing means with third information on call state (in this instance, call waiting).

The Park Publication Does Not Teach Or Suggest Determining a Tone Replacing Sound Based on the Received Third Information on Call State Nor Providing the Determined Tone-replacing Sound as a RingBack to the Second-In-Time Call-Sending Terminal Through the Call-Receiving Exchanger.

The third step of claim 2 requires that the sound providing means determine a tone replacing sound based on the third information, which as defined in the second step, is call state information. Call state information is defined in the specification and in the art as, an idle state, a busy state, a call-waiting state and the like. The third step also requires that the determined tone-replacement sound be sent as a ringback to the second-in-time call-sending terminal.

As previously noted, the Examiner has admitted that the Park publication does not teach or suggest furnishing the sound providing means with third information on the call state. This is because the Park publication is limited to retrieving an alternative sound for a ringing state and, therefore, in the teachings of the Park publication the call state is not required because only the ringing state is afforded an alternative sound. As such, the Park Publication does not teach or suggest determining, at the sound providing means, a tone replacement sound based on the call state. Additionally, the Park publication does not teach or suggest sound replacement or alternative sounds for the situation in which the device receives a call from a second-in-time call-sending terminal caller but is already participating in another call with a first-in-time terminal (i.e., a call-waiting situation). As such the Park publication does not teach or suggest providing the tone-replacement sound as a ringback to the second-in-time call-sending terminal.

The Hong Park Publication Does Not Teach or Suggest Providing the Tone-Replacing Sound as a Ringback to the Second-In-Time Call-Sending Terminal Through the Call-Receiving Exchanger.

The third step of claim 2 requires that the determined tone-replacement sound be sent as a ringback to the second-in-time call-sending terminal.

As previously noted, the teachings of the Hong Park publication are device-based tone replacement, as opposed to the network-based tone replacement system of the present invention. As such, the Hong Park publication teaching is limited to providing replacement tones to the device on which the system/CPU resides. The Hong Park publication does not teach or suggest providing replacement tones to the calling party and, more specifically a second-in-time calling party, when the called party is already participating in another call with a first-in-time caller. Thus, the Hong Park publication does not teach or suggest providing a tone-replacement sound as a ringback to a second-in-time call-sending terminal through the call-receiving exchanger.

The Hong Park Publication Does Not Teach Or Suggest Requesting a Second Trunk Connection to the Sound Providing Means for the Connected First-In-Time Terminal While Providing the Sound Providing Means with Fourth Information on Call-Switched.

The fourth step of claim 2 requires requesting a second trunk connection to the sound providing means for the connected first-in-time terminal while providing the sound providing means with fourth information on call-switched. This is the instance in which the called party chooses to participate in a call with the second-in-time call-sending terminal and place the first-in-time terminal on hold. The second trunk connection to the sound providing means is made to acquire a tone-replacing sound for the first-in-time terminal that is currently in a call-switch or hold state.

As previously noted, the teachings of the Hong Park publication are device-based tone replacement, as opposed to the network-based tone replacement system of the present invention. As such, the Hong Park publication teaching is limited to providing replacement tones to the device on which the system/CPU resides. The Hong Park publication does not teach or suggest providing replacement tones to the calling party and, more specifically a first-in-time terminal who has been placed in a call-switch or holding state. Further since, the Hong Park publication is a device-based system, the Hong Park publication does not teach requesting trunk connections. Thus, the Hong Park publication does not teach or suggest requesting a second trunk connection to the sound providing means for the connected former caller while providing the sound providing means with fourth information on call-switched.

The Park Publication Does Not Teach or Suggest Determining, by the Sound Providing Means, a Tone-replacing Sound Based on the Received Fourth Information on Call-Switched.

The fifth step of claim 2 requires that the sound providing means determine a tone replacing sound based on the fourth information, which as defined in the fourth step, is call-switching state information. Call-switching state information is defined in the specification and in the art as, the instance in which a call is switch from one calling party to another calling party.

The Examiner has admitted that the Park publication does not teach or suggest furnishing the sound providing means with fourth information on the call-switching state. This is because the Park publication is limited to retrieving an alternative sound for a ringing state and, therefore, in the teachings of the Park publication the call state is not required because only the ringing state is afforded an alternative sound.

Therefore, it cannot be properly asserted that the Park publication teaches determining, at the sound providing means, a tone replacement sound *based on the fourth information*, which is call-switching state.

The Hong Park Publication Does Not Teach or Suggest Providing the Determined Tone-Replacement Sound as a Call-Waiting Tone to the First-In-Time Caller Through the Call-Receiving Exchanger.

The fifth step of claim 2 further requires providing the determined tone-replacement sound as a call-waiting tone to the first-in-time terminal through the call-receiving exchanger. In this regard the first-in-time terminal that has been placed on hold is provided a replacement sound as opposed to the conventional call-waiting or hold tone.

As previously noted, the teachings of the Hong Park publication are device-based tone replacement, as opposed to the network-based tone replacement system of the present invention. As such, the Hong Park publication teaching is limited to providing replacement tones to the device on which the system/CPU resides. The Hong Park publication does not teach or suggest providing replacement tones to the calling party and, more specifically a first-in-time terminal that has been placed in a call-switch or holding state. Further since, the Hong Park publication is a device-based system, the Hong Park publication does not teach providing a tone-replacement sound through a call-receiving exchanger. Thus, the Hong Park publication does not teach or

suggest providing the determined tone-replacement sound as a call-waiting tone to the first-in-time terminal through the call-receiving exchanger.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 2. Claims 4 and 12-17 depend from Claim 2. Therefore, Claims 4 and 12-17 are believed allowable for at least the same reasons as presented above with respect to Claim 2.

Claims 10, 11, and 17 are rejected under 35 USC § 103(a) as being unpatentable over the Park publication in view of the Hong Park publication and in further in view of United States Patent No. 6,603,844, issued in the name of inventor Chavez, Jr. et al. (hereinafter, the Chavez patent).

Claims 10 and 11 depends from Claim 1 and, as a matter of law, adds a further limitation to independent Claim 1. Further the Chavez patent does remedy the deficiencies of the Park and Hong Park publications. Therefore, Claims 10-11 is believed allowable for at least the same reasons presented above with respect to Claim 1.

Claim 17 depends from Claim 2 and, as a matter of law, adds a further limitation to independent Claim 2. Further the Chavez patent does remedy the deficiencies of the Park and/or Hong Park publications. Therefore, Claim 17 is believed allowable for at least the same reasons presented above with respect to Claim 2.

### **Conclusion**

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and a Notice to that effect is earnestly solicited. Should any questions remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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